Charge to the National Advisory Council for Environmental Policy and Technology
Energy and Environment Workgroup

I. BACKGROUND

This charge is being developed to address key challenges that EPA is facing in the energy sector. Energy has and continues to be one of the Administration's highest priority areas. President Bush – in just his second week in office – established the National Energy Policy Development Group, which led to the issuance of the Administration's National Energy Policy (NEP) in May 2001. Since that time, the Administration has implemented many of the regulatory and voluntary measures outlined in the NEP, and championed energy legislation in each Congress, culminating in the passage of the Energy Policy Act (EPAct) of 2005 last summer.

As the NEP notes, our national energy policy "must protect our environment." The NEP further illustrates how the last three and one half decades have shown that our dual priorities of a reliable energy supply and a clean environment are both attainable. Indeed, as our demand for energy has increased by nearly 50% since 1970, the aggregate emissions of the six major air pollutants, for example, has decreased by over 50% – all while the economy nearly tripled. EPA has led many efforts that stemmed from the NEP and the EPAct of 2005, including: expansion of voluntary programs such as ENERGY STAR; development of multi-pollutant legislation (the Clear Skies Initiative) and regulations (Clean Air Interstate Rule); and, development of our nation's Renewable Fuel Standard.

But as the NEP states, "more can be done" – to protect public health and the environment, to develop the next generation of clean and efficient energy technologies, and to ensure a reliable energy supply. For even as EPA has worked extensively with the energy sector and other stakeholders to craft widely supported rulemakings to address some of the largest sources of air pollution, power plants, motor vehicles, and other energy sources will continue to be prominent in inventories of air pollutants and greenhouse gases, and emissions to land and water from increased extraction and transportation of natural resources will occur. In some geographic areas, increased energy production will further challenge and compete for scarce natural resources (e.g., water) with other increased demands from agriculture, industrial, and residential uses. These kinds of challenges may require a more integrated, collaborative strategy, identifying innovative win-win solutions for sustainable development and use of these resources for competing purposes while protecting the environment and expediently meeting our nation's need for energy.

The President has made development of advanced energy technologies – from biofuels to coal gasification to carbon sequestration – a core part of his energy and climate policy. Congress, through the EPAct of 2005, and EPA and other federal agencies, through various regulatory actions, voluntary initiatives, and research, have taken many steps to support development and deployment of these technologies. Nonetheless, more may be possible to help ensure that these technologies penetrate the marketplace to enhance our national energy security and environmental goals.

Sustainability is also now emerging as a high priority for EPA Administrator, Steve Johnson, as well as for other organizations in the U.S. and around the world. In a November, 2005 Report entitled, *"Everyday Choices: Opportunities for Environmental Stewardship,"* Administrator Johnson sees an evolving role for EPA to move from pollution control to pollution prevention and sustainability. In addition, the Office of Research and Development recently developed a *"Sustainability Research Strategy."* In brief, these two efforts identified the following sustainable outcomes: 1) sustain clean and healthy air; 2) protect and restore ecosystem functions, goods, and services; 3) generate clean energy and use it efficiently; 4) support ecologically sensitive land management and development; 5) use materials carefully and shift to environmentally preferable materials; and 6) sustain water resources of quality and availability for desired uses. Sustainability goals lead to production and consumption approaches in ways that reduce life-cycle environmental impacts while also addressing social and economic issues. Sustainability of natural resources for our current and future generations' use has become a critical environmental issue. Energy production and use intersects with many of these natural resources, and requires us to understand the intersection of energy with land, water, and air quality taking a systems-based approach. Therefore, ORD is interested to identify emerging benefits and environmental challenges with increased energy activity and to develop an integrated multi-media strategy to ensure expedience in EPA's role in ensuring clean and abundant energy, including investments in science-based decision tools, and science and technology research.

Energy, regardless of what kind, can be thought of as a system composed of 1) a source of feedstock (be it renewable or non-renewable); 2) conversion technologies that render usable energy; and 3) distribution and/or transportation of the energy product for multiple uses in society. These components are synergistic and interdependent. Understanding EPA's programmatic and regional roles, relative to other federal agencies, state, local, and tribal governments, industry and the public, will be critical for EPA to be responsive to energy issues while protecting the environment.

Differences in geographic distribution of natural resources dictate varying levels of energy related activities within EPA programs and regions. Some EPA regions have intense activity in extraction of conventional resources, but many regions will also be involved in environmental issues associated with harvesting and conversion of biomass, permitting bio-refineries, or initiatives to encourage new energy technologies and practices leading to environmental benefits. All regions have energy development, production, transmission, storage, and use activities for which they may also be involved. Media programs will also have varying levels of energy related activities and opportunities.

Whether one looks broadly at energy issues or focuses down on one particular issue or technology, EPA has three broad categories of activities that can influence the acceleration of sustainable, clean and efficient energy sources and technologies: 1) understanding and developing science and technologies; 2) policies and regulations; and 3) fostering implementation of a broad range of projects and concepts in various programs, at the regional, state, and local level. Multi-media coordination and collaboration among many federal agencies,

states, local governments, tribes, the public and industry will be needed to ensure new energy options.

This NACEPT charge will focus on those aspects of energy for which EPA has a mandate to lead or collaborate with others on national priority issues, as highlighted in President Bush's *Advanced Energy Initiative* or the Energy Policy Act. In particular this charge will concentrate on specific environmental issues and opportunities pertaining to two vital areas: 1) increased acceleration of the development of domestic, renewable transportation fuels, and 2) diversifying energy sources to provide reliable, affordable, and clean energy. One national priority area that explicitly demonstrates the interdependence of energy and the environment is the development and commercialization of biofuels.

II. CHARGE TO NACEPT ENERGY WORKGROUP

The Energy Workgroup of NACEPT is asked to assist the Agency in advancing cost-effective and sustainable approaches to ensuring both a clean environment and a reliable energy supply. It is the Agency's position that these dual goals are not in conflict. Rather, through effective planning and policy-making, and with the research, life cycle analysis, development, and verification of new clean technologies, we can achieve both goals in each of the short-, medium-, and long-term.

EPA's ability to expediently carry out functions associated with energy, while assuring protection of a sustainable environment, is of critical importance to achieving clean, reliable, domestic sources of energy. Understanding national energy and environmental priorities, EPA's role, and implementation abilities will need to be the foundation of developing a successful action plan to achieve our nation's energy and environmental goals.

EPA requests that NACEPT recommend a strategic integrated multi-media framework to plan EPA's work related to national energy priorities for which EPA has a direct role, or an environmental interest. One national priority area, that explicitly demonstrates the interdependence of energy and the environment and the involvement of multiple programs and regions, is the development and commercialization of biofuels. EPA suggests the initial phase of the NACEPT charge focus on this area.

<u>Overall Goals</u>

A. Protect public health, air, water, land, other natural resources and habitats, moving towards the sustainable outcomes highlighted in the *"Sustainability Research Strategy"* and the *"Everyday Choices: Opportunities for Environmental Stewardship"* Report.

B. Ensure that our nation has a clean, safe, efficient, secure, and reliable energy supply, for all critical sectors, including: development of clean energy resources, refining and transport of fuels, power generation, industry, and end-uses for electricity and transportation.

C. Encourage widespread adoption of emerging and new technologies that could have a significant impact regarding meeting environmental and sustainability goals associated with energy supply.

By December 2007, the Agency requests that NACEPT provide it with a set of recommendations to build the country's energy supply, without sacrificing environmental protections and optimize programmatic and regional activities related to national energy priorities focusing on biofuels. The Agency may choose to have NACEPT explore the same set of issues regarding the extraction of conventional and non-conventional fossil fuels at a later date.

EPA requests that NACEPT recommend a strategic framework for EPA to plan its work related to biofuels to ensure its contribution to expedient and environmentally sustainable development of energy supplies. More detailed requests related to each issue are itemized below, after the general discussion of considerations and recommendations to EPA.

General Discussion

This recommendation should clarify how EPA can optimize its effectiveness in activities for which EPA has a sole leading role, a collaborative leading role, or an assisting role to others, considering EPA's basic functions of: 1) developing science and technology to assess and mitigate environmental impacts of technologies and practices; 2) developing policies and regulations; 3) regional implementation and oversight of state regulations and enforcements, as appropriate; 4) developing voluntary program initiatives; and 5) communication to the public, States, Tribes, industry, other government entities, and others.

This framework should consider:

- EPA's mission to protect human health and the environment
- Current and emerging environmental priorities
- Various program functions and goals (as designated in EPA's Strategic Plan),
- Sustainability goals articulated in *"Everyday Choices: Opportunities for Environmental Stewardship"* Report and ORD's *"Sustainability Research Strategy"*
- A system-based approach and specific sustainability goals in relation to biofuels implementation
- Emerging national energy priorities, as reflected in President Bush's National Energy Policy and the Energy Policy Act of 2005
- Other significant emerging trends in the economic, social, and political fields that could impact environmental and energy systems
- All components of the system (i.e., feedstock, conversion technologies, and distribution of product)
- Diverse biofuel sources for attaining environmentally optimal results
- Consider how EPA's roles complement other federal agencies efforts and identify opportunities for further collaboration in each energy system component

This framework should identify the following:

- Activities that would encourage sustainable practices related to biofuels
- How activities associated with biofuels could potentially impact national environmental priorities and long-term sustainability outcomes (either beneficial or detrimental impacts)
- Strategies for communicating the environmental impacts associated with biofuels
- What type of regulatory direction, guidance, and outreach will be needed to fulfill EPA's added regulatory role in how biofuels are developed, processed, and transported
- New practices and technologies that have potential environmental benefits and risks particularly in relation to EPA environmental goals
- What approaches can be taken to incorporate impacts from biofuels into EPA's strategic planning process and achieve environmental goals in all media programs?
- What mechanisms can be applied to identify the contributions of all EPA media programs to the development of clean energy with a focus on biofuels, taking into account EPA's regulatory and voluntary programs, research, and implementation at regional, state and local levels?
- Offices and Regions that would be most concerned with these impacts and have potential to influence environmental outcomes
- Key science and technology issues, research needs, and science-based decision tools that EPA either currently has or should develop (e.g., life-cycle assessment, technology verification, environmental research related to sustainability, etc.)
- What strategies can be implemented to forecast trends and scenarios related to biofuels?
- What actions can be taken to identify feedstock and conversion technologies that are of interest to industry and the public, particularly wastes and conversion technologies relevant to biofuels?
- Other federal agencies' priorities related to biofuels that EPA should consider in deciding a path forward, and identify collaborative opportunities within EPA and between EPA and other federal agencies, states, tribes, local governments, universities, and others to achieve national priorities.

Office of Research and Development

The Office of Research and Development, responsible for providing sound science as the foundation of EPA's work and to help determine which environmental problems pose important risks to our natural environment, human health, and our quality of life, is asking that NACEPT look at biofuels as a system, and recommend a strategic, integrated, multi-media framework to identify risks and benefits associated with the biofuels system, including development and harvesting of feedstock, conversion technologies, and infrastructure to distribute the energy, and make recommendations for collaborating and coordinating science and technology research and development of decision tools related to sustainable biofuels within EPA as well as with other federal agencies states, tribes, local governments, universities, and other appropriate entities.

NACEPT should consider potential roles programs and regions can play in assuring sustainable biomass feedstock and environmentally protective conversion technologies, and sustainable infrastructures for distribution and use of biofuels.

Along with considerations mentioned in the general discussions, the framework should reflect activities being implemented by EPA and other federal agencies, as summarized by a DOE-led Posture Plan being developed for the USDA and DOE-led Biomass Research and Development Board.

Office of Air and Radiation

The Office of Air and Radiation, given its mandates and core responsibilities of ensuring clean air and development of the Renewable Fuels Standard, has focused the NACEPT charge on a specific questions related to encouraging availability and use of biofuels.

The Energy Policy Act of 2005 established a new national renewable fuels program, the Renewable Fuels Standard (RFS), to be implemented by the EPA. EPA proposed a draft rule on September 7, 2006 that would assure the required amount of renewable fuel enters the transportation system. While no specific type of renewable fuel is mandated through 2012, most of this renewable fuel is expected to be ethanol which will be added to gasoline at a 10% blend rate (E10). As a compliment to this regulatory program, EPA is exploring non-regulatory strategies for promoting those renewable fuel blends with the greatest potential for environmental benefit, specifically E85 (a bend of 85% ethanol and 15% gasoline) and biodiesel. A number of automobile companies are heavily promoting flexible fuel vehicles (FFVs) capable of running on E-85 as well as gasoline; over 5 million FFVs are on the road today and that number is increasing. However, no manufacturer plans to have FFV capability across its entire product line and some manufacturers have no near term plans to market any FFVs in the U.S. The availability of E85 fuel is even more limited with only about 600 of the 170,000 filling stations in the U.S. offering E85. The availability of biodiesel fuel is similarly very limited.

We ask that NACEPT:

- Provide the Agency with its opinions regarding the best approach or strategy the Agency can take to encourage the availability and use of renewable fuels which would have the greatest environmental benefit.

- Consider how EPA's roles complement other Federal Agencies' and state or local efforts and identify opportunities for further collaboration.